

Notice of Allowability

Application No.

10/067,740

Applicant(s)

HAYASHI, JUNICHI

Examiner

Minh Dinh

Art Unit

2132

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed 6/1/06 and examiner's amendment authorized on 8/22/06.
2. ☒ The allowed claim(s) is/are 1-21.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

DETAILED ACTION

Response to Amendment

1. This action is in response to the RCE/amendment filed 06/01/2006.
Claims 1, 8, 16-18 and 20 have been amended

Response to Arguments

2. Applicant's arguments, see the last paragraph of page 17, filed 06/01/2006, with respect to the rejection of claims 1-15 under 35 USC 101 have been fully considered and are persuasive. In light of Applicant's argument that claim 1 is intended to invoke 112, 6th paragraph, and that each of the means must include the underlying hardware necessary to achieve its functionality, each of the means is now being interpreted as including both the hardware and software necessary to achieve the recited functionality, with the hardware and software being that disclosed and any art-recognized equivalents thereto, and therefore the 101 rejection has been overcome. The rejection of claims 1-15 under 35 USC 101 has been withdrawn.
3. Applicant's arguments, see 1st full paragraph of page 18, with respect to rejection of claims 1-21 under 35 USC 112, first paragraph as failing to comply with the written description requirement have been fully considered

and are persuasive. The amended independent claims 1, 8, 16-18 and 20 address the issue. The rejection of claims 1-21 under 35 USC 112, first paragraph has been withdrawn.

Examiner's Amendment

4. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Gary Jacobs on 8/22/06.

The claims have been amended as follows:

1. (Currently Amended) An information processing apparatus for embedding authentication information into digital information, comprising:

generating means for generating authentication information on the basis of the digital information;

digital watermarking means for embedding the generated authentication information into the digital information by adding a value to or subtracting a value from each of plural elements which form the digital information,

wherein said digital watermarking means determines whether an element would have a value outside a variable range permitted for the element after the addition or subtraction and, if the element would have a value outside the variable range permitted for the element, said digital

watermarking means excludes the element from an embedding process upon embedding the generated authentication information into the digital information; and

output means for outputting the digital information embedded by said digital watermarking means and information specifying the position of ~~an element~~ elements which, after the addition or subtraction, would have a value outside the variable range permitted for the elements element.

16. (Currently Amended) A method of controlling an information processing apparatus for embedding authentication information into digital information, comprising:

a step of generating authentication information on the basis of the digital information;

a digital watermarking step of embedding the generated authentication information into the digital information by adding a value to or subtracting a value from each of plural elements which form the digital information,

wherein said digital watermarking step determines whether, after the addition or subtraction, an element would have a value outside a variable range permitted for the element and, if the element would have a value outside the variable range permitted for the element, said digital watermarking step excludes the element from an embedding process upon embedding the generated authentication information into the digital information; and

an output step for outputting the digital information embedded in said digital watermarking step and information specifying the position of ~~an element~~ elements which, after the addition or subtraction, would have a value outside the variable range permitted for the elements element.

18. (Currently Amended) A computer program stored in a computer-readable storage medium, which is loaded and executed by a computer to make the computer function as an information processing apparatus for embedding authentication information into digital information, comprising:

a program code of the step of generating authentication information on the basis of the digital information;

a program code of the digital watermarking step of embedding the generated authentication information into the digital information by adding a value to or subtracting a value from each of plural elements which form the digital information,

wherein said watermarking step determines whether, after the addition or subtraction, an element would have a value outside a variable range permitted for the element and, if the element would have a value outside the variable range permitted for the element, said digital watermarking step excludes the element from an embedding process upon embedding the generated authentication information into the digital information; and

a program code of an output step for outputting the digital information embedded in said digital watermarking step and information specifying the position of ~~an element~~ elements which, after the addition or subtraction, would have a value ~~exceeding~~ outside the variable range for the elements ~~element~~.

22 -37. (Canceled)

5. The following is an examiner's statement of reasons for allowance.

The present invention is directed to (i) an apparatus, method and software for embedding authentication information as a watermark into digital information; and (ii) an apparatus, method and software for authenticating the digital information by extracting the embedded watermark and verifying the extracted watermark. More specifically, independent claims 1, 16 and 18 identify the uniquely distinct features: wherein said digital watermarking means determines whether an element would have a value outside a

variable range permitted for the element after the addition or subtraction and, if the element would have a value outside the variable range permitted for the element, said digital watermarking means excludes the element from an embedding process upon embedding the generated authentication information into the digital information; and output means for outputting information specifying the position of elements which, after the addition or subtraction, would have a value outside the variable range permitted for the elements. Corresponding to claims 1, 16 and 18, independent claims 8, 17 and 20 identify the uniquely distinct features: means for inputting the information identifying elements excluded from the embedding process; means for extracting, as first authentication information, the authentication information embedded as the digital watermark from the digital information, on the basis of the acquired information identifying elements excluded from the embedding process. The closest prior art, Watanabe (7,051,207), Shur (6,630,672), Honsinger et al. (6,278,791), discloses embedding authentication information as watermark at certain elements of digital information according to a watermark key and, at a verifying side, using the watermark key to identify the elements of the digital information used in the embedding process to extract the embedded watermark. However, Shur, Honsinger, and Girod, either alone or in combination, does not teach, at the embedding side, determining whether an element would have a value

outside a permitted range, excluding such element from embedding process and generating information identifying elements excluded from the embedding process; and, at the verifying side, using that information to extract the embedded watermark. The prior art, taken either singly or in combination, fails to anticipate or fairly suggest the limitations of applicant's independent claim, in such a manner that a rejection under 35 U.S.C 102 or 103 would be proper. The claimed invention is therefore considered to be in condition for allowance as being novel and nonobvious over prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh Dinh whose telephone number is 571-272-3802. The examiner can normally be reached on Mon-Fri: 10:00am-6:30pm.

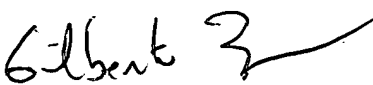
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on 571-272-3799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MD

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8/22/06


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